

1. An internal gear pump comprising: an inner rotor  
formed with "n" external teeth ("n" is a natural number);  
5 and an outer rotor formed with (n+1) internal teeth which  
are engageable with the external teeth, and a casing formed  
with a suction port for drawing fluid and a discharge port  
for discharging fluid, the fluid being conveyed by drawing  
and discharging the fluid by changes in volumes of cells  
10 formed between tooth surfaces of the inner rotor and the  
outer rotor while the inner rotor and the outer rotor  
rotate in engagement with each other,

wherein the internal diameter of a hole formed in the  
casing for accommodating the inner rotor and the outer  
15 rotor is set to be 0.1 mm to 0.6 mm larger than that the  
external diameter of the outer rotor, and

when "er" is an eccentric distance between the inner  
rotor and the outer rotor and "eh" is an eccentric distance  
between the inner rotor and the hole formed in the casing,  
20 the following inequality is satisfied:

$$0.005 \text{ mm} \leq (e_h - e_r) \leq 0.030 \text{ mm}$$

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ABSTRACT

There is disclosed an internal gear pump in which the sliding resistance of the internal gear pump can be reduced, and the occurrence of noise and a decrease in the pump efficiency can be suppressed to the minimum even in this construction. The internal gear pump includes an inner rotor having external teeth, and an outer rotor having internal teeth, and draws and discharges fluid to convey the fluid while the inner rotor and the outer rotor rotate in engagement with each other. The internal diameter of a hole formed in a casing for accommodating the inner rotor and the outer rotor is set to be 0.1 mm to 0.6 mm larger than that the external diameter of the outer rotor. When "er" is an eccentric distance between the inner rotor and the outer rotor and "eh" is an eccentric distance between the inner rotor and the hole formed in the casing, the following inequality is satisfied:  $0.005 \text{ mm} \leq (eh - er) \leq 0.030 \text{ mm}$ .